the use of the balance sheet accounts, as amended by material supplied in the Notes to the Financial Statement. The formula used in calculating the investment base is detailed in Appendix B to this part.

Step 5: Determination of Target Rate of Return on Investment

(1) The fifth step in the Great Lakes pilotage ratemaking methodology is to determine the Target Rate of Return on Investment. For each Association, a market-equivalent return-on-investment (ROI) is allowed for the recognized net capital invested in the Association by its members.

(2) The allowed Return on Investment (ROI) is based on the preceding year's average annual rate of return for new issues of high grade corporate securities.

(3) Assets subject to return on investment provisions must be reasonable in both purpose and amount. If an asset or other investment is not necessary for the provision of pilotage services, that portion of the return element is not allowed for ratemaking purposes.

Step 6: Adjustment Determination

(1) The next step in the Great Lakes pilotage ratemaking methodology is to insert the results from steps 1, 2, 3, and 4 into a formula that is based on a basic regulatory rate structure, and comparing the results to step 5. This basic regulatory rate structure takes into account revenues, expenses and return on investment, and is of the following form:

Line	Ratemaking projections for basic pilotage
1.	+ Revenue (from step 3)
2.	− Operating Expenses (from step 1)
3.	− Pilot Compensation (from step 2)
4.	= Operating Profit/(Loss)
5.	− Interest Expense (from Audit reports)
6.	= Earnings Before Tax
7.	− Federal Tax Allowance
8.	= Net Income
9.	Return Element (Net Income + Interest)
10.	÷ Investment Base (from step 4)
11.	= Return on Investment

(2) The Director will compare the projected return on investment (as calculated using the formula above) to the target return on investment (from step 5), to determine whether an adjustment to the base pilotage rates is necessary. If the projected return on investment is significantly different from the target return on investment, the revenues that would be generated by the current pilotage rates are not equal to the revenues that would need to be recovered by the pilotage rates.

(3) The base pilotage revenues that are needed are calculated by determining what change in projected revenue will make the target return on investment equal to the projected return on investment. This ''projection of revenue needed'' is used in determining the basis for proposed adjustments to the base pilotage rates. The mechanism for adjusting the base pilotage rates is discussed in Step 7 below. The required return, tax, and interest elements may be considered additions to the operating expenses and pilot compensation components of the base pilotage rates.

Step 7: Adjustment of Pilotage Rates

The final step in the Great Lakes pilotage ratemaking methodology is to adjust base pilotage rates if the calculations from Step 6 show that pilotage rates in a pilotage area should be adjusted, and if the Director determines that it is appropriate to go forward with a rate adjustment. Rate adjustments are calculated in accordance with the procedures found in this step. However, pilotage rates calculated in this step are subject to adjustment based on requirements of the Memorandum of Arrangements between the United States and Canada, and other supportable circumstances that may be appropriate.

(2) Pilotage rate adjustments are calculated for each area by multiplying the existing pilotage rates in each area by the rate multiplier. The rate multiplier is calculated by inserting the result from the steps detailed above into the following formula:

Line	Ratemaking projections
1.	+ Revenue Needed (from step 6)
2.	÷ Revenue (from step 3)
3.	= Rate multiplier

[60 FR 18370, Apr. 11, 1995. Redesignated and amended at 61 FR 32655, June 25, 1996; 62 FR 5923, Feb 10, 1997. Redesignated and amended by USCG–1998–3976, 63 FR 35139, 35140, June 29, 1998; USCG–2002–11288, 68 FR 69578, Dec. 12, 2003]

APPENDIX B TO PART 404—RATEMAKING DEFINITIONS AND FORMULAS

The following definitions apply to the ratemaking formula contained in this appendix.

(1) Operating Revenue—means the sum of all operating revenues received by the Association for pilotage services, including revenues such as docking, moveage, delay, detention, cancellation, and lock transit.

(2) Operating Expense—means the sum of all operating expenses incurred by the Association for pilotage services, less the sum of disallowed expenses.

(3) Target Pilot Compensation—means the compensation that pilots are intended to receive for full time employment. For pilots providing services in undesignated waters, the target pilot compensation is the average annual compensation for first mates on U.S. Great Lakes vessels. For pilots providing services in designated waters, the target pilot compensation is 150% of the average annual compensation for first mates on U.S. Great Lakes vessels.

(4) Operating Profit/(Loss)—means Operating Revenue less Operating Expense and Target Pilot Compensation.

(5) Interest Expense—means the reported Association interest expense on operations, as adjusted to exclude any interest expense attributable to losses from non-pilotage operations.

(6) Earnings Before Tax—means Operating Profit/(Loss), less the Interest Expense.

(7) Federal Tax Allowance—means the Federal statutory tax on Earnings Before Tax, for those Associations subject to Federal tax.

(8) Net Income—means the Earnings Before Tax, less the Federal Tax Allowance.

(9) Return Element (Net Income plus Interest)—means the Net Income, plus Interest Expense. The return element can be considered the sum of the return to equity capital (the Net Income), and the return to debt (the Interest Expense).

(10) Investment Base (separately determined)—means the net recognized capital invested in the Association, including both equity and debt. Should capital be invested in other than pilotage operations, that capital is excluded from the rate base.

(11) Return on Investment—means the Return element, divided by the Investment Base, and expressed as a percent.

Investment Base Formula

(1) Regulatory Investment (Investment Base) is the recognized capital investment in the useful assets employed by the pilot groups. In general, it is the sum of available cash and the net value of real assets, less the value of land. The investment base is established through the use of the balance sheet accounts, as amended by material supplied in the Notes to the Financial Statement.

(2) The Investment Base is calculated using financial data from the Great Lakes pilot associations, as audited and approved by the Director. The Investment Base would be calculated as follows:

Description

Recognized Assets:
- + Total Current Assets
- − Total Current Liabilities
- + Current Notes Payable
- + Total Property and Equipment (Net)
- − Land
- + Total Other Assets

= Total Recognized Assets

Non-Recognized Assets
- + Total Investments and Special Funds

= Total Non-Recognized Assets

Total Assets
- + Total Recognized Assets
- + Total Non-Recognized Assets

= Total Assets

Recognized Sources of Funds
- + Total Stockholders' Equity
- + Long-Term Debt
- + Current Notes Payable
- + Advances from Affiliated Companies
- + Long-Term Obligations-Capital Leases

= Total Recognized Sources

Non-Recognized Sources of Funds
- + Pension Liability
- + Other Non-Current Liabilities
- + Deferred Federal Income Taxes
- + Other Deferred Credits

= Total Non-Recognized Sources

Total Sources of Funds
- + Total Recognized Sources
- + Total Non-Recognized Sources

= Total Sources of Funds

(3) Using the figures developed above, the Investment Base is the Recognized Assets times the ratio of Recognized Sources of Funds to Total Sources of Funds.

[60 FR 18370, Apr. 11, 1995. Redesignated at 61 FR 32655, June 25, 1996, and further redesignated by USCG–1998–3976, 63 FR 35139, June 29, 1998]

Appendix C to Part 404—Procedures for Annual Review of Base Pilotage Rates

The ratemaking methodology detailed in appendix A is used by the Director to determine base pilotage rates at least once every five years, as required by §404.1. In the intervening years the Director will review, if warranted by cost changes, recalculate base pilotage rates proposed for coordination with Canada using the following procedures:

Step 1: Calculate the total economic costs for the base period (i.e. pilot compensation expense plus all other recognized expenses plus the return element) and divide by the total bridge hours used in setting the base period rates;

Step 2: Calculate the "expense multiplier," the ratio of other expenses and the return element to pilot compensation for the base period;